

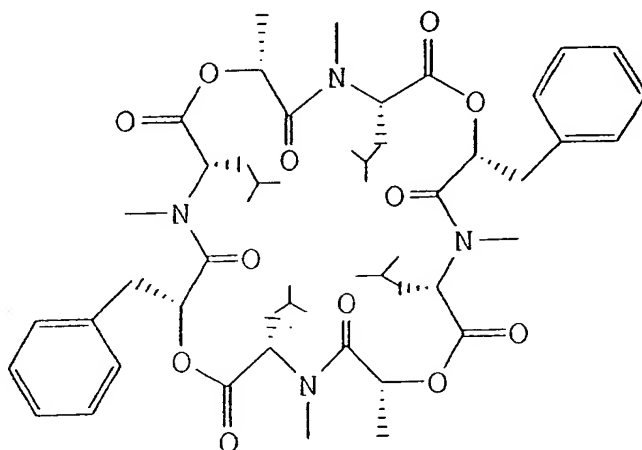
AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A transformant of ~~an organism producing a secondary metabolite having a benzene ring skeleton that is not substituted with a functional group containing a nitrogen atom at the para-position~~ a microorganism producing a peptide or a depsipeptide, wherein the transformant is produced by transforming the microorganism is transformed by introducing ~~a gene involved in a biosynthetic pathway from chorismic acid to p-aminophenylpyruvic acid (biosynthesis gene)~~ (i) a polynucleotide encoding the amino acid sequence of SEQ ID NO: 2 or a modified sequence of SEQ ID NO: 2 having 4-amino-4-deoxychorismic acid synthase activity, (ii) a polynucleotide encoding the amino acid sequence of SEQ ID NO: 4 or a modified sequence of SEQ ID NO: 4 having 4-amino-4-deoxychorismic acid mutase activity, and (iii) a polynucleotide encoding the amino acid sequence of SEQ ID NO: 6 or a modified sequence of SEQ ID NO: 6 having 4-amino-4-deoxyprephenic acid dehydrogenase activity, so that the transformant produces a ~~secondary metabolite~~ a peptide or a depsipeptide having a benzene ring skeleton substituted at the para-position with ~~a functional group containing a nitrogen atom~~ a nitro group or amino group, and wherein the modified sequences have one to several modifications selected from the group consisting of a substitution, a deletion, an insertion, and an addition.

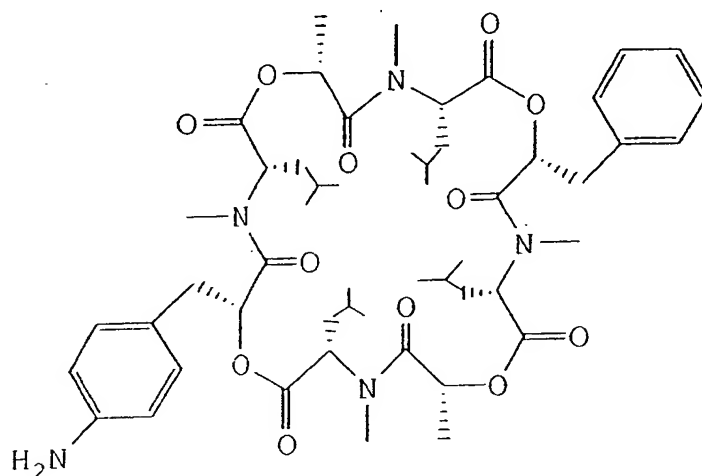
2-4. (Canceled)

5. (Currently amended) The transformant according to claim 4 1, wherein the peptide or the depsipeptide is synthesized from at least one ~~building block~~ amino acid selected from the group consisting of phenylalanine, tyrosine, and phenyllactic acid.

6. (Currently amended) The transformant according to claim 1, wherein the ~~organism~~ microorganism to be transformed is ~~a microorganism that produces a compound of the following formula:~~ produces a substance PF1022 ([cyclo (D-lactyl-L-N-methyllaucyl-D-3-phenyllactyl-L-N-methyllaucyl-D-lactyl-L-N-methyllaucyl-D-3-phenyllactyl-L-N-methyllaucyl)]), represented by the following formula:



7. (Currently amended) The transformant according to claim 6 1, wherein the ~~secondary~~ metabolite produced by the transformant is a compound of the following formula; transformant produces a substance PF1022 derivative represented by the following formula:



8-16. (Canceled)

17. (Currently amended) The transformant according to claim 8, ~~9 or 16~~ 1, wherein the gene encoding 4-amino-4-deoxychorismic acid synthase, the gene encoding 4-amino-4-deoxychorismic acid mutase, and the gene encoding 4-amino-4-deoxyprephenic acid dehydrogenase ~~comprise~~ the microorganism is transformed by introducing polynucleotides comprising: (i) the DNA sequence of SEQ ID NO: 1, (ii) the DNA sequence of SEQ ID NO: 3, and (iii) the DNA sequence of SEQ ID NO: 5, respectively into the microorganism.

18. (Canceled)

19. (Currently amended) The transformant according to claim ~~18~~ 1, wherein the microorganism to be transformed is Mycelia sterilia.

20. (Currently amended) The transformant according to claim 19, wherein Mycelia sterilia is a strain PF1022 deposited with the National Institute of Bioscience and Human-Technology under an accession number of FERM BP-2671.

21. (Currently amended) The transformant according to ~~any one of claims 1 to 20~~ claim 1, wherein the transformant is strain 55-65 deposited with the National Institute of Bioscience and Human-Technology under an accession number of FERM BP-7255.

22. (Canceled)

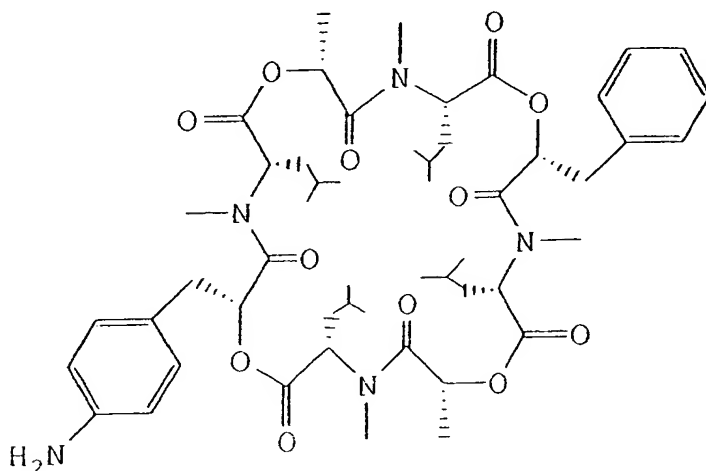
23. (Currently amended/Withdrawn) A method for producing ~~a secondary metabolite a peptide or a depsipeptide~~ having a benzene ring skeleton substituted at the para-position with a functional group containing a nitrogen atom a nitro group or amino group, which comprises the steps of

culturing the transformant of ~~any one of claims 1 to 22~~ claim 1 under conditions suitable for production of the peptide or the depsipeptide, and

collecting the ~~secondary metabolite having a benzene ring skeleton substituted at the para-position with a functional group containing a nitrogen atom~~ the peptide or the depsipeptide.

24. (Canceled)

25. (Currently amended/Withdrawn) A method for producing a substance PF1022 derivative, which comprises the steps of
culturing the transformant of claim 6, ~~19, 20 or 21~~ under conditions suitable for production of the substance PF1022 derivative, and
collecting the substance PF1022 derivative of the following formula[[.]] :



26. (Currently amended) ~~A~~ An isolated polynucleotide encoding the amino acid sequence of SEQ ID NO: 2 or a modified sequence of SEQ ID NO: 2 having 4-amino-4-deoxychorismic acid synthase activity.

27. (Original) The polynucleotide according to claim 26, which comprises the DNA sequence of SEQ ID NO: 1.

28. (Currently amended/Withdrawn) A An isolated polynucleotide encoding the amino acid sequence of SEQ ID NO: 4 or a modified sequence of SEQ ID NO: 4 having 4-amino-4-deoxychorismic acid mutase activity.

29. (Withdrawn) The polynucleotide according to claim 28, which comprises the DNA sequence of SEQ ID NO: 3.

30. (Currently amended/Withdrawn) A An isolated polynucleotide encoding the amino acid sequence of SEQ ID NO: 6 or a modified sequence of SEQ ID NO: 6 having 4-amino-4-deoxyphenic acid dehydrogenase activity.

31. (Withdrawn) The polynucleotide according to claim 30, which comprises the DNA sequence of SEQ ID NO: 5.

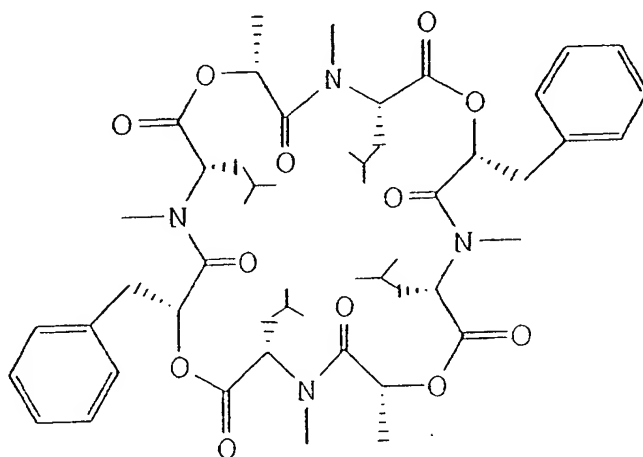
32. (New) The transformant according to claim 6, wherein substance PF1022 is synthesized by a substance PF1022-synthesizing enzyme from four molecules of L-leucine, two molecules of D-lactic acid and two molecules of D-phenyllactic acid.

33. (New) A transformant of Mycelia sterilia, wherein the transformant is produced by transforming the Mycelia sterilia by introducing (i) a polynucleotide encoding the amino acid sequence of SEQ ID NO: 2 or a modified sequence of SEQ ID NO: 2 having 4-amino-4-deoxychorismic acid synthase activity, (ii) a polynucleotide encoding the amino acid sequence of SEQ ID NO: 4 or a modified sequence of SEQ ID NO: 4 having 4-amino-4-deoxychorismic acid mutase activity, and (iii) a polynucleotide encoding the amino acid sequence of SEQ ID NO: 6 or a modified sequence of SEQ ID NO: 6 having 4-amino-4-deoxyphenic acid dehydrogenase activity, and wherein the modified sequences

have one to several modifications selected from the group consisting of a substitution, a deletion, an insertion, and an addition.

34. (New) The transformant according to claim 33, wherein Mycelia sterilia is transformed by introducing polynucleotides comprising (i) the DNA sequence of SEQ ID NO: 1, (ii) the DNA sequence of SEQ ID NO: 3, and (iii) the DNA sequence of SEQ ID NO: 5 into the Mycelia sterilia.

35. (New) The transformant according to claim 33, wherein the Mycelia sterilia to be transformed produces a substance PF1022 ([cyclo (D-lactyl-L-N-methyllleucyl-D-3-phenyllactyl-L-N-methyllleucyl-D-lactyl-L-N-methyllleucyl-D-3-phenyllactyl-L-N-methyllleucyl)]), represented by the following formula:



36. (New) The transformant according to claim 35, wherein substance PF1022 is synthesized by a substance PF1022-synthesizing enzyme from four molecules of L-leucine, two molecules of D-lactic acid and two molecules of D-phenyllactic acid.

37. (New) The transformant according to claim 33, wherein the transformant produces a substance PF1022 derivative represented by the following formula:

